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ABSTRACT

This paper describes critical pedagogy (i.e., a perspective on teaching that seeks to increase equality, voice, individual and cultural expression, and democracy in classrooms) which is meaningful in research on using technology in teacher education. The first section discusses critical pedagogy as it applies to the uses of technology for teacher education in the United Kingdom; the "National Grid for Learning," which advocates for vocational goals rather than addressing issues of culture, personal development, and equity of access, is challenged. The second section, focusing on autonomy and control in indigenous preschool teacher education in Australia, highlights the need to consider cognitive, affective, and technical scaffolding in learning environments that are sensitive to the ways in which children solve problems and build on their current understandings. The third section examines critical discourse in an online reading course in California through the lens of democratic principles of advocacy, reconciling multiple sources of information and active participation. (Contains 11 references.) (MES)

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In Search Of The Revolutionary Power Of Critical Pedagogy: Issues Of Ideology, Power, And Culture In Technology Teacher Education

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G.H. Marks

Abstract: Critical pedagogy is a perspective on teaching that seeks to increase equality, voice, individual & cultural expression and democracy in classrooms. The following three authors describe contexts in which they find critical pedagogy meaningful in their own research using technology in teacher education.

Introduction

Though well intentioned and well planned, many of the methods designed to help teachers use technology in the classroom don't have a transformational effect on children because they don't address underlying and systemic societal issues such as discrimination, violence, and poverty. Political and administrative forces have proposed technocratic solutions such as: (1) attempting to push teachers to learn ever greater amounts of content and technical skills; (2) purchasing more computer laboratories; and (3) placing more 'teaching tips' and links on the world wide web. All these proposals have missed the mark of addressing important social issues. While misunderstood, critical pedagogy challenges teacher educators to recognize, engage, and critique undemocratic uses of technology in teacher education that sustain inequality and oppressive social relations. In contrast to many educational movements, there is no generic definition of critical pedagogy nor are there single defining practices. Rather, there are insights and practices which are woven into various approaches which grow out of a core group of common concerns about equality, individual & cultural expression, and democracy.

In this paper, the authors seek to illuminate and promote that core group of concerns of critical pedagogy in contexts in which technology is used to develop teachers both in the classroom and at the university. Avril Loveless, presents a few ideas on one aspect for critical pedagogy as they apply to the uses of technology in the national context for teacher education in the United Kingdom. Loveless challenges the 'National Grid for Learning' which advocates for vocational goals rather than addressing issues of culture, personal development, and equity of access.

Nicola Yelland highlights the need to consider cognitive, affective and technical scaffolding in learning environments which are sensitive to the ways in which children solve problems and build on their current

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understandings. Glenn DeVoogd examines online discourse through the lens of democratic principles of advocacy, reconciling multiple sources of information, and active participation

Taking a Critical View Of ICT in the United Kingdom- What Difference Might it Make in the 'Information Society'?

Utopian and dystopian commentaries on the role of information and communications technologies (ICT) in education can be thought-provoking and promote discussion and re-examination of beliefs and practice (Negroponte, 1995; Healy, 1998). There is, however, a danger that they present a simplistic view and do not acknowledge the complexity of the interactions between people, technology and the context of the learning environment. Teachers, pupils, teacher educators and students can engage in an informed and critical discussion of the appropriate use of ICT in schools and its impact on learners' wider cultural experiences. This may require an examination of current perceptions and practices and a consideration of alternative approaches to the challenges and consolations of ICT in learning and teaching. This section will present a discussion of issues of critical pedagogy with ICT and illustrate key points with reference to a current case study in an English Primary School.

The role of education as the requisite of success and survival in the 'information society' is reflected in national and international governmental policy for prosperity in the global economy (Robins & Webster, 1999). The impact of information and communication technologies on the structural transformations of advanced societies is highlighted in descriptions of the changes in flows, networks and identities in economic and social relationships between individuals, regions and countries. Adopting a critical pedagogy perspective with ICT requires a consideration of the ways in which issues of access, culture, gender, identity, the special needs of the learner, pedagogical practices and educational systems enable learners and teachers to have experiences which are either empowering or limiting for participants in the 'informational society' (Castells, 1999)

Access to ICT resources for the 'haves and have-nots' has a powerful impact at individual, national and global levels, yet this issue is not often articulated or addressed within the education community (Moran, 1999). Similarly, claims made for the revolutionary potential of communication technologies to break down barriers of identity and relationship, are not necessarily supported in the media portrayal of 'everyday' use of ICT (Selfe, 1999). A 'cultural airlock' exists between children's use of ICT in home and recreational environments and their use in schools and classrooms (Sanger, forthcoming). Parent and teacher discourse about the purposes of ICT in young children's experience focuses on future vocational needs rather than current learning and pedagogy does not always clearly identify the differences between learning objectives for ICT skills and wider contextual capability (Downes, 1999, Loveless, 1995).

The British Government has prioritized the use of ICT in teaching and learning, both in schools and in lifelong learning. The introduction of ICT resources into all schools to support the National Grid for Learning and the implementation of a national training program with identified 'Expected Outcomes' for all practicing teachers is influencing teachers' perceptions and pedagogy in schools. The author's current research focuses on a case study of an English Primary School undergoing change in policy and practice during the first year of the introduction of the National Grid for Learning. Teachers' perceptions of the purposes of ICT in education; models of access to resources; needs analysis for personal and professional development and concerns in the implementation of national and local policy are being observed and discussed. A critical ethnographic approach is adopted in order to place the interpretations of the case study in a wider framework (Carspecken, 1996).

Autonomy & Control in Indigenous Preschool Teacher Education (Australia)

From a personal perspective, critical pedagogy offers the opportunity to address challenging issues, to engage in dialog about social and cultural aspects of our work and to ensure that all children have equal access and opportunities to develop skill with the use of the new information technologies.

Computers are more than a tool for learning. They are artifacts of our culture which can act as cognitive amplifies of mind as well as offer opportunities to access knowledge which is not possible without the technology. Sir Francis Bacon once said that "knowledge is power" but the extent to which this power can influence individuals or society will depend on being able to access and process the information acquired.

The work that I have been engaged in over the past decade in the U. K. has been related to applications of technology in teaching and learning contexts which empower learners, and in doing so fundamentally change the nature of pedagogy in educational contexts, both at the university and school levels.

In considering the notion of power it is essential to understand that teachers, by virtue of their position, are situated in positions of power in relation to students. Students will feel vulnerable and powerless in learning contexts unless teachers relinquish their power and help students not only to become autonomous learners, but also to feel in control of their own learning.

The importance of developing autonomy in learning should be an important part of any program for the preparation of teachers for the early childhood years. As teachers of young children we aim to provide environments to promote active learning, inquiry and problem solving in contexts where children are engaged in collaborations and authentic activity. The children in our centers should be provided with opportunities to work on tasks, which have been initiated from their own interests as well as those designed by the teacher for a specific purpose. The importance of working with tasks that are engaging and which afford the opportunity to build knowledge and skills cannot be underestimated. In such contexts the teacher is a facilitator who assists the children to make new discoveries in an environment characterized by whole group discussions, sharing of ideas and strategies, working individually and in small groups, communicating via a range of media, challenging tasks which integrate areas of knowledge and the development of confidence and competence in problem solving. Such notions have to be incorporated in teacher education programs not only for our credibility but also so that students can participate in communities of practice which embody such ideals.

In these contexts the importance of recognizing student's Zone of Proximal Development (ZPD) (Vygotsky, 1978) and scaffolding learning are important skills for teachers to develop. My research (e.g. Yelland, 1999, in preparation) has identified a need to reconceptualize scaffolding to accommodate the use of technology in the classroom. It is proposed that we need to consider cognitive, affective and technical scaffolding in learning environments, which are sensitive to the ways in which children solve problems and build on their current understandings. The research has revealed that when students are engaged in tasks that afford them the opportunity to work collaboratively using a variety of processes in which they can actively build knowledge, the learning experience is much richer as a result. Further, if they are able to communicate their ideas via the new information technolgies they are able to participate in knowledge building communities with their peers, where distance is not a barrier. The results of the studies have important implications for the content and structure of curricula for young children. Such programs are mostly situated in the Developmentally Appropriate Practice (DAP) framework and often contain content which has been deemed to be necessary by adults who, as experts, decide what young children need to do and know, and construct curricula accordingly.

The research contexts that I share with my students are based on situations in which children were provided with an environment for learning in which they could grow as autonomous learners. However, at the same time they were provided with support from their teacher to develop knowledge and skills that would assist them to acquire more advanced concepts and processes in new and dynamic ways. These were modeled in class contexts so that student teachers were able to experience them first hand in order to decide if they wanted to include them as part of their own teaching repertoire in their interactions with young children.

In a different context I have worked with Indigenous students at our University in a project that was designed to enhance their academic success and to ensure that they had the opportunity to become confident and competent with various applications of technology. The project created a community of practice with technology that focused on teaching and mentoring Indigenous students, as opposed to providing them with training sessions in the use of technology.

Typically training, in the use of computers, positions the trainer as expert who transmits information to the audience. In computer contexts, this often equates with imparting technical information that involves a great deal of specialist language that can alienate listeners and make them feel inadequate. This was not only the feeling indigenous students reported to us when we discussed their lack of use of technology, in particular computers, in their teacher education program. It was also interesting to note that we received similar comments from female and non-English speaking students.

Prior to our project with Indigenous students in our faculty there was not sound base of support for encouraging the use technology except in University based training programs, which were developed by computer support personnel who had no experience in teaching. The program that we initiated was constructed in collaboration with the students. The content was negotiated on the basis of our knowledge of computer applications and their descriptions of what they needed to achieve in their work. A mentor, rather than an instructor, was hired and she worked with the students in small groups contexts on the basis of their identified needs. The theoretical framework that guided the development of the project was based on the work of who argued that social practice, what people do and how they communicate about it, is the primary generative phenomenon, and learning is one of its characteristics. In fact, they located " learning not in the acquisition of the structure, but in the increased access of learners to participating roles in expert performance " (Lave and Wenger, 1991:17).

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A key part of this process is imparting skill and knowledge with increasing levels of sophistication and participation. In this context, learning is viewed as being in a particular social world, not merely knowing or describing it. The characteristics of such a community, which make it particularly effective when:

- Participants have broad access to different parts of the activity and eventually proceed to full participation in core tasks
- There is abundant horizontal interaction between participants, mediated by stories of problematic situations and their solutions
- The structure of the community is transparent for the learner's inspection.

The project was successful in not only increasing participation and confidence with technology but also resulted in the University hiring the mentor on a permanent basis. The structure of the program epitomized the ideals of democratization of curriculum via negotiation of content and the style of interactions between teachers and learners. It provided another context for enacting our philosophy of teaching and learning in the University context, which was characterized by, shared power for making decisions and opportunities for autonomous learning. It also recognized that our students come from diverse backgrounds and that a *one size fits all* mentality is not appropriate when educating students to become teachers who will become professionals interested in the best ways to promote lifelong learning.

Critical Discourse in an Online Reading Course in the Central Valley of California

In inservice teacher education course focusing on reading instruction, democratic practices, in part, can be described as ways intern teachers: 1) express feelings about approaches to reading, 2) reconcile the confusion that arises over the information coming from multiple sources, and 3)express their voice and advocacy as active participants. In this section, the written discourse from teacher interns who write on an online bulletin board is briefly described from a critical theory perspective.

The context of this study consists of 19 intern teachers who are taking a course to compete their initial teaching credential. The reading course, focusing on reading instruction in grades 4-8 (ages 9-14), covers the topics such as organizing reading instruction, student reading assessment, comprehension, content area reading, and writing. Most of the intern teachers taking the course are teaching full time and take this course on the web with the exception of five face to face class meetings which are scheduled periodically in four hour blocks. Soon after the end of the course, these intern teachers are required to pass the California state Reading Instructional Competency Assessment (exam).

When the course started, 80% of students who were 90% hispanic had never used the world wide web before. Most of the teachers worked and lived in rural areas of the central valley of California where agriculture and farm work dominate as the major source of employment.

The weekly online assignments consisted of: 1) reading the text and book of handouts before each class, 2) read over the professor's notes of the topics and highlights of the readings, 3) taking a one question essay quiz online, 4) read the posts on the topic of the week responding briefly to two, and 5) write a page length essay reconciling information from multiple sources including their own thoughts, their classroom teaching, the readings, and the professors' notes. For the purposes of this study, the online responses (4) and page length essays were analyzed.

An qualitative analysis consisted of reading the online comments from a critical perspective several times to establish categories of the online posts. Using QRS Nudist software, the posts were placed into emerging categories to be later reanalyzed for the number of times the event occurred and the depth or impact of the comment on the discussion. The following examples attempt to give the reader a feeling of the breadth and depth of the comments from a critical perspective.

For the purposes of this paper, an analysis of the data describes the discourse to reflect the character of a democratic institution, 'the town meeting' (instead of a classroom), in which teacher interns act as active participants, elaborating on a range of sources of knowledge, as advocates for approaches, and with honesty admitting to failures and asking questions. The use of the bulletin board as a piece of technology and the assignments, both as context and purpose of the activity produces a radically different discourse the teacher-centered IRE (teacher initiates a question, student responds, teacher evaluates) discourse described by Cuban (1984) which had formed the basis on what in some classes was 88% of the classroom discourse. In such as discourse pattern the teacher maintains strict control over or the agenda and content of the discourse.

In the following quote taken from the online discourse, notice: 1) the feelings, 2) reconciliation of multiple sources of knowledge, 3) sense of active voice of the intern teacher and the sources of information:

I believe that students are the best PR that books can get. If one student likes a book and talks it up among his friends, they are going to want to read it as well. I take this idea one step further. Later in the year, I will require my students to do an oral book review. However, the catch is that they must present the review dressed as a character from the book and give a review in the first person. I have seen this done and the results are amazing. The response of the students and the excitement about reading is awe-inspiring. I suppose my point in this rambling response is to.) and take them one step further... or as far as your students will allow you to go!

The student writing in the online post above exhibits feeling by using dramatic words such as "amazing," and "awe-inspiring." Such comments emote enthusiasm, that give color and emotion to the passage. Secondly, the author appears to be reconciling different sources of information including their own knowledge base ("I believe"), the reading instruction textbook ("*...take these great ideas (grand conversations, lit. logs, story mapping, etc...)* and information gained in the school ("I have seen this done...."). The intern expresses his advocacy by stating what he believes ("I believe") and the sense of active voice is evident in the five times the student uses the word "I" in the brief paragraph. Certainly, the intern's ideas are thoughtful, organized, and succinct; they are much different from the kind of discourse that typically occurs orally in classrooms.

The democratic nature of the 'town meeting' is exhibited in a sense of advocacy in the voice of the writers in other parts of the online bulletin board as well. In the next examples, interns show their sense of advocacy as if trying to convince others with, "KWL is a great way to engage students in learning" and "I was excited to use this strategy..." In contrast to an exam or a class in which the student responds to a question asked by the teacher, the student isn't merely responding to the teacher's question, the intern was advocating. Certainly, if teachers are going to participate in the democratic processes in their work or develop a sense of advocacy in their students, the development of this skill is important.

Democracy requires active engagement which is typical on the online bulletin board as opposed to the passive assent which is typical of the traditional classroom. As active participants, interns normally express their feelings on the online bulletin board demonstrate a sense of honesty, ("I don't use the text to learn"), describe problems ("I have grown frustrated with conferencing"), and express support for each other ("Keep up the good work..." and "I like Travis' idea..."). Again, in these texts, one senses feelings and active voice that is not common in the traditional classroom oral discourse.

In summary, the examples of online discourse above describe ways in which this technological tool, the bulletin board, can be used to promote emotion, reconciling multiple sources of information, and active voice. In many ways, this online course resembles the democratic institution of the town meeting in which emotion and a sense of advocacy is proposed for an idea; the people in the meeting have to reconcile the different points of view to make a decision; and finally, people express their voice in communal ways that describe their problems honestly and express their support for each other.

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